

WHAT IS CLAIMED IS:

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11 ~~12~~. An optical probe for the non-invasive measurement of characteristics of a medium, said optical probe comprising:  
an emitter which transmits optical radiation;  
a detector configured to detect said optical radiation after attenuation through said medium;  
a flexible circuit assembly extending between said emitter and said detector, said flexible circuit assembly having electrical circuit paths for said detector and said emitter; and

10 a cushion positioned between said detector and said emitter along said flexible circuit.

2 ~~13~~. The optical probe of Claim 12, further comprising a flexible backing supporting said flex circuit.

3 ~~14~~. The optical probe of Claim 12, said cushion being formed in said flexible circuit between said emitter and said detector so that said cushion abuts a patient's fingertip when said optical probe is attached to said fingertip.

4 ~~15~~. The optical probe of Claim 12, further comprising an optical cavity containing said detector.

5 ~~19~~. An optical probe for the non-invasive measurement of characteristics of a medium, said optical probe comprising:

an emitter which transmits optical radiation;

a detector configured to detect said optical radiation;

a flexible circuit assembly extending between said emitter and said detector; and

25 a substrate which forms a surface of said flex circuit assembly, said substrate constructed to have a V-configuration, said emitter and said detector positioned on opposite branches of said V-configuration.

6 ~~20~~. The optical probe as defined in Claim 19, flexible backing sized to affix to a member of a newborn baby.

7 ~~21~~. the optical probe of Claim 20, wherein said member is a foot.

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A2

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B3